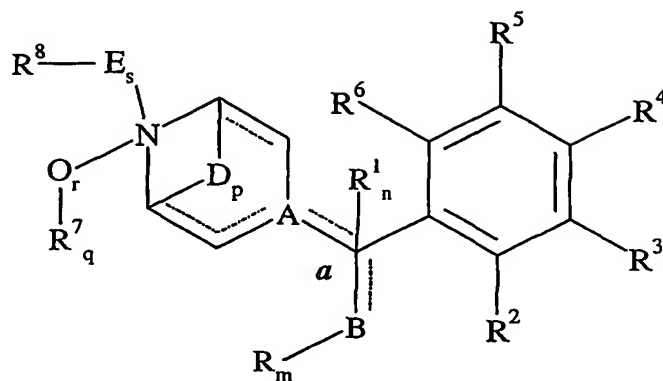


WHAT IS CLAIMED IS:

Claim 1. A compound of formula I:



I

wherein;

m, n, q, r, and s are independently selected from 0 or 1; and p is 0, 1, 2, or 3;

A is CH or N, forming a six-membered azine ring selected from piperidine or piperazine;

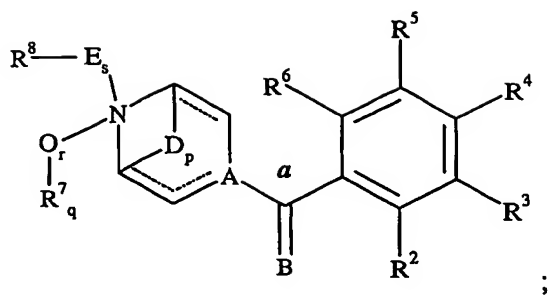
R², R³, R⁴, R⁵, and R⁶ are independently selected from hydrogen, halogen, alkyl, haloalkyl, hydroxyl, alkoxy, haloalkoxy, pentahalothio, alkylthio, cyano, nitro, alkylcarbonyl, alkoxy carbonyl, aryl, or aryloxy, or either of R² and R³, or R³ and R⁴ are taken together with -OCF₂O-, -OCF₂CF₂-, -CF₂CF₂O-, or -CH=CHCH=CH-, forming a benzo-fused ring;

provided that when,

(a) m and n are 0;

a carbonyl group with methyl carbon (a) is formed,

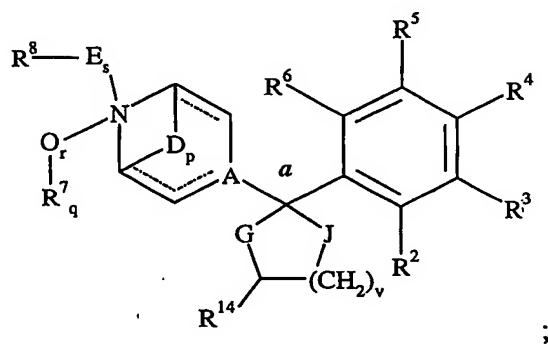
84



where B is O;

(b) *m* is 0 and *n* is 1;

(i) B and R¹ are taken together with $-G-CH(R^{14})-(CH_2)_v-J-$, and with methyl carbon (*a*), a heterocyclic ring is formed;

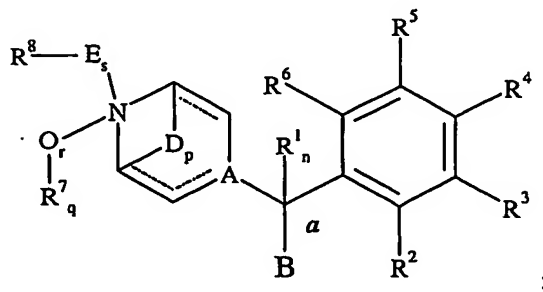


where

G and J are independently selected from O or S; *v* is 1, or 2; and R¹⁴ is selected from hydrogen, or aryl optionally substituted with halogen or haloalkyl;

or,

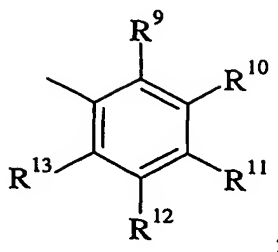
ii) A is N, a piperazine ring is formed, and single bonds between methyl carbon (*a*) and the 4-position of the piperazine ring and to its other substituents are formed;



85

where

B is phenyl substituted with R^9 , R^{10} , R^{11} , R^{12} , and R^{13} ,



where

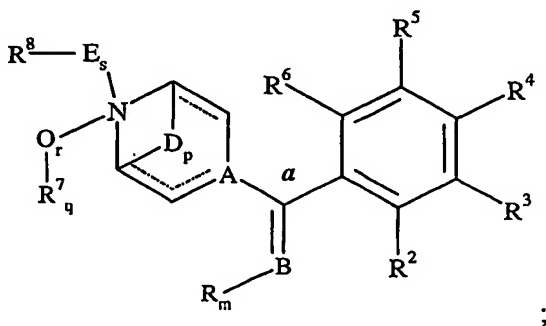
R^9 , R^{10} , R^{11} , R^{12} , and R^{13} are independently selected from hydrogen, halogen, alkyl, haloalkyl, hydroxyl, alkoxy, haloalkoxy, mercapto, alkylthio, cyano, alkylcarbonyl, alkoxy carbonyl, and aryloxy, and, wherein either of R^9 and R^{10} , or R^{10} and R^{11} may be taken together with $-OCF_2O-$, $-OCF_2CF_2-$, or $-CF_2CF_2O-$, forming a benzo-fused ring;

and,

R^1 is selected from hydrogen, alkyl, alkoxyalkyl, or aryl;

(c) m is 1 and n is 0;

a double bond between methyl carbon (α) and B is formed;



where

B is a bridging group from methyl carbon (α) to R, and is selected from $CH-$, NN^* , NNR^{15*} , $NNR^{15}CH_2^*$, $NNR^{15}C(=O)^*$, $NNR^{15}SO_2^*$, $NNR^{15}C(=O)NR^{16*}$ and $NNR^{15}C(=S)NR^{16*}$ where the asterisk denotes attachment to R;

where

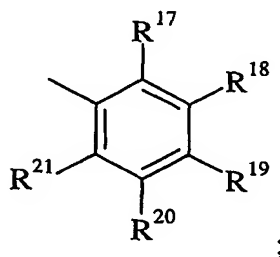
R^{15} and R^{16} are independently selected from hydrogen, alkyl, alkylaminocarbonyl, and arylcarbonyl wherein the aryl is optionally substituted with halogen, alkyl, alkoxy, haloalkyl, haloalkoxy, or nitro;

where

R is alkyl, cycloalkyl, alkenyl, or alkoxy carbonyl;

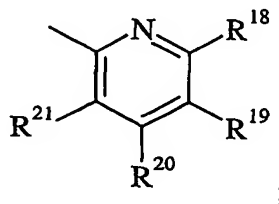
or

R is phenyl substituted with R^{17} , R^{18} , R^{19} , R^{20} , and R^{21} ;



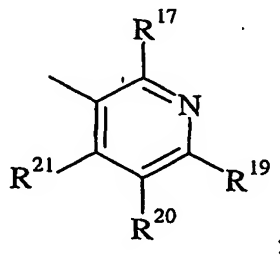
or

R is pyrid-2-yl substituted with R^{18} , R^{19} , R^{20} , and R^{21} ,



or

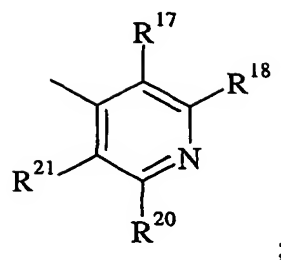
R is pyrid-3-yl substituted with R^{17} , R^{19} , R^{20} , and R^{21} ,



or

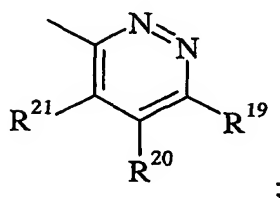
R is pyrid-4-yl substituted with R^{17} , R^{18} , R^{20} , and R^{21} ,

87



or

R is pyridazin-3-yl substituted with R¹⁹, R²⁰ and R²¹,



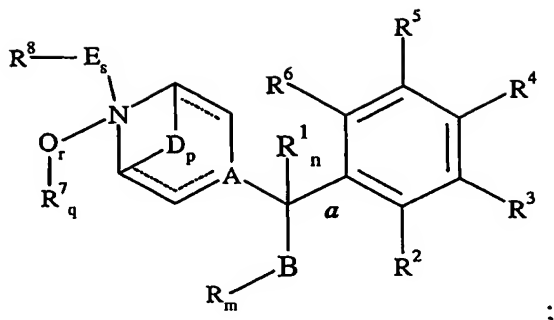
where

R¹⁷, R¹⁸, R¹⁹, R²⁰, and R²¹ are independently selected from hydrogen, halogen, alkyl, haloalkyl, alkoxy, haloalkoxy, alkylthio, haloalkylthio, cyano, nitro, alkylcarbonyl, alkoxy carbonyl, alkoxy carbonylamino, aryl, aryloxy, or 2-alkyl-2H-tetrazine, and, wherein either of R¹⁷ and R¹⁸, or R¹⁸ and R¹⁹ may be taken together with -OCF₂O-, -OCF₂CF₂-, -CF₂CF₂O-, or -CH₂CH=CHCH₂-, forming a benzo-fused ring;

d) m and n are 1;

A is N, a piperazine ring is formed, and single bonds between methyl carbon (a) and the 4-position of the piperazine ring and to its other substituents are formed;

88



where

B is a bridging group from methyl carbon (a) to R;

where

B is selected from O, S, CH₂, *CH₂O, *OCH₂, OC(=O)O, *OC(=O)NR¹⁵, *NR¹⁵C(=O)O, *OC(=S)NR¹⁵, *NR¹⁵C(=S)O, *OCH₂C(=O)NR¹⁵, *NR¹⁵C(=O)CH₂O, *CH₂OC(=O)NR¹⁵, *NR¹⁵C(=O)OCH₂, *NR¹⁵CH₂, *CH₂NR¹⁵, *NR¹⁵C(=O), *C(=O)NR¹⁵, *NR¹⁵SO₂, *SO₂NR¹⁵, *NR¹⁵NHSO₂, *SO₂NHNR¹⁵, *OC(=O)NR¹⁵SO₂, *SO₂NR¹⁵C(=O)O, *OC(=O)NR¹⁵CHR¹⁶, *CHR¹⁶NR¹⁵C(=O)O, *NR¹⁵C(=O)NR¹⁶; 1,4-dioxycyclohexyl, or 4-oxypiperidin-1-yl, where the asterisk denotes attachment to the methyl carbon (a); where R¹⁵ and R¹⁶ are described above;

where

R and R¹ are described above;

when p is 1, 2, or 3;

D is -CH₂-, and an azabicyclo derivative of the six-membered azine ring is formed;

when q is 0, and r is 1, an N-oxide derivative of the six-membered azine ring nitrogen is formed;

when q is 1 and r is 0 or 1;

R⁷ is selected from alkyl, haloalkyl, hydroxyalkyl, alkoxyalkyl, dialkylaminoalkyl, alkylaminocarbonyloxyalkyl, alkylthioalkyl, alkylsulfonylalkyl, alkylcarbonyloxyalkyl, alkoxycarbonylalkyl, carboxyalkyl, arylalkyl, arylcarbonyl, sulfonato, or sulfonatoalkyl, and may bear a negative charge

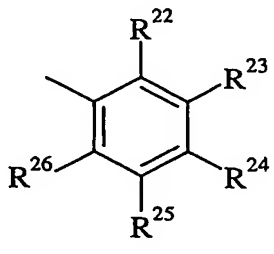
resulting in an inner salt; and a separate ion is chloride, bromide, iodide, or an alkyl or phenyl sulfate or sulfonate;

when s is 0 or 1;

R^8 is selected from hydrogen, alkyl, cycloalkyl, cycloalkylalkyl, alkoxy, alkoxyalkyl, amino, morpholinyl, optionally substituted indolyl, piperidinyl, optionally substituted (pyridyl)alkenyl, optionally substituted 1,2,3,4-tetrahydronaphthylenyl, optionally substituted arylpyrazolyl, benzo[b]thiophenyl, 5-hydropyridino[1,2a]pyrimidinonyl, optionally substituted 4-hydro-1,3-thiazolino[3,2a]pyrimidinonyl, 1,2,3,4-tetrahydroquinolinyl, 2-thioxo-1,3-dihydroquinazolinonyl, 1,3-dihydroquinazolinonyl, or benzo[c]azolinonyl, wherein the optional substituent is selected from halogen, alkyl, alkoxy, and nitro;

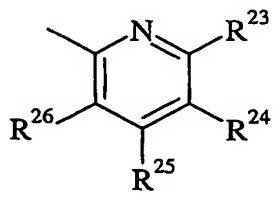
or

R^8 is phenyl substituted with R^{22} , R^{23} , R^{24} , R^{25} , and R^{26} ,



or

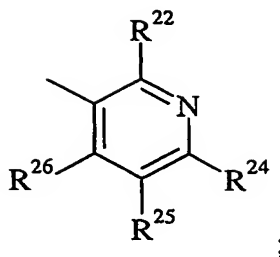
R^8 is pyrid-2-yl substituted with R^{23} , R^{24} , R^{25} , and R^{26} ,



or

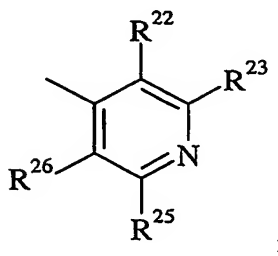
R^8 is pyrid-3-yl substituted with R^{22} , R^{24} , R^{25} , and R^{26} ,

90



or

R⁸ is pyrid-4-yl substituted with R²², R²³, R²⁵, and R²⁶,



where

R²², R²³, R²⁴, R²⁵, and R²⁶ are independently selected from hydrogen, halogen, alkyl, hydroxy, alkoxy, alkoxyalkyl, dialkoxyalkyl, trialkoxyalkyl, alkoxyiminoalkyl, alkenyloxyiminoalkyl, alkynyloxyiminoalkyl, cycloalkylalkoxy, alkoxyalkoxy, alkylthio, dithioalkoxyalkyl, trithioalkoxyalkyl, alkylsulfonyl, alkylaminosulfonyl, dialkylaminosulfonyl, cycloalkylaminosulfonyl, alkenyloxy, alkynyloxy, haloalkenyloxy, alkylsulfonyloxy, optionally substituted arylalkoxy, cyano, nitro, amino, alkylamino, alkylcarbonylamino, alkoxy carbonylamino, alkenyloxycarbonylamino, alkynyloxycarbonylamino, haloalkylcarbonylamino, alkoxyalkoxy carbonylamino, (alkyl)(alkoxy carbonyl)amino, alkylsulfonylamino, optionally substituted (heteroaryl)(alkoxy carbonyl)amino, optionally substituted arylcarbonylamino, formyl, optionally substituted 1,3-dioxolan-2-yl, optionally substituted 1,3-dioxan-2-yl, optionally substituted 1,3-oxazolidin-2-yl, optionally substituted 1,3-oxazaperhydroin-2-yl, optionally substituted 1,3-dithiolan-2-yl, optionally substituted 1,3-dithian-2-yl, alkoxy carbonyl, alkylaminocarbonyloxy, alkylaminocarbonylamino, dialkylaminocarbonylamino, alkylamino(thiocarbonyl)amino,

dialkylphosphoroureidyl, optionally substituted thienyl, optionally substituted 1,3-thiazolylalkoxy, optionally substituted aryl, optionally substituted aryloxy, optionally substituted aryloxyalkyl, optionally substituted arylaminocarbonyloxy, optionally substituted heteroaryl, optionally substituted heteroaryloxy, optionally substituted pyrrolyl, optionally substituted pyrazolyl, optionally substituted pyrazinyloxy, optionally substituted 1,3-oxazolinyloxy, optionally substituted 1,3-oxazolinyloxy, optionally substituted 1,3-oxazolinyloxy, optionally substituted 1,3-oxazolinyloxy, optionally substituted 1,2,4-triazolyl, optionally substituted 1,2,3-thiadiazolyl, optionally substituted 1,2,5-thiadiazolyl, optionally substituted 1,2,5-thiadiazolyloxy, optionally substituted 2H-tetrazolyl, optionally substituted pyridyl, optionally substituted pyridyloxy, optionally substituted pyridylamino, optionally substituted pyrimidinyl, optionally substituted pyrimidinyloxy, optionally substituted 3,4,5,6-tetrahydropyrimidinyloxy, optionally substituted pyridazinyloxy, or optionally substituted 1,2,3,4-tetrahydronaphthalenyl, wherein the optional substituent is selected from one or more of halogen, alkyl, haloalkyl, alkoxy, dialkoxyalkyl, dithioalkoxyalkyl, cyano, nitro, amino, or alkoxycarbonylamino;

when s is 1;

E is a bridging group selected from $-(CR^{27}R^{28})_x-(CR^{29}R^{30})_y-$, $-(CR^{27}R^{28})_x-(CR^{29}R^{30})_yO^*$,

$-C_3H_6-$, $-C_4H_8-$, $-C(=O)-$, $-C(=O)C_2H_4^*$, $-C_2H_4C(=O)^*$, $-C_3H_6C(=O)^*$, $-C_4H_8NHC(=O)^*$, or $-C(=S)NH^*$, where the asterisk denotes attachment at R^8 ;

where

x is 1; y is 0, or 1;

and where

R^{27} , R^{28} , R^{29} , and R^{30} are independently selected from hydrogen, alkyl, and aryl optionally substituted with alkoxy;

N-oxides; and agriculturally-acceptable salts thereof;

with the proviso that when

A is N, forming said piperazine ring;

s is 0 or 1; and when s is 1

E is said bridging group C(=O), or $-(CR^{27}R^{28})_x-(CR^{29}R^{30})_y-$ where x is 1 and y is 0, and R^{27} and R^{28} are hydrogen,

and

R^8 is selected from optionally substituted indolyl, optionally substituted arylpyrazolyl, and benzo[b]thiophenyl;

or,

R^8 is phenyl substituted with R^{22} , R^{23} , R^{24} , R^{25} and R^{26} where R^{22} , R^{23} , R^{25} and R^{26} are hydrogen;

and

R^{24} is selected from hydrogen, halogen, hydroxy, alkoxy, cycloalkylalkoxy, optionally substituted arylalkoxy, cyano, nitro, alkylamino, alkoxycarbonylamino, (alkyl)(alkoxycarbonyl)amino, (heteroaryl)(alkoxycarbonyl)amino, alkoxycarbonyl, optionally substituted aryloxy, optionally substituted 1,2,5-thiadiazolyloxy, optionally substituted 2H-tetrazole, optionally substituted pyridyl, and optionally substituted pyridyloxy;

then,

q is 0, and r is 1, forming an N-oxide.

Claim 2. A compound of claim 1, wherein p and q are 0; r is 0 or 1; and s is 1; R^2 , R^3 , R^4 , R^5 , and R^6 are independently selected from hydrogen, halogen, alkyl, haloalkyl, hydroxyl, alkoxy, haloalkoxy, pentahalothio, alkylthio, nitro, aryl, and aryloxy; E is the bridging group $-(CR^{27}R^{28})_x-(CR^{29}R^{30})_y-$, where x is 1 and y is 0, R^{27} and R^{28} are hydrogen; and R^8 is phenyl substituted with R^{22} , R^{23} , R^{24} , R^{25} , and R^{26} , where R^{22} , R^{23} , R^{24} , R^{25} , and R^{26} are independently selected from hydrogen, alkoxy, dialkoxyalkyl, dithioalkoxyalkyl, alkoxyiminoalkyl, alkenyloxyiminoalkyl, alkynyloxyiminoalkyl, alkoxycarbonylamino, optionally substituted arylcarbonylamino, alkoxycarbonyl, alkylaminocarbonyloxy, optionally substituted 1,3-dioxolane-2-yl, optionally substituted 1,3-dioxan-2-yl, optionally substituted 1,3-dithiolan-2-yl, optionally substituted 1,3-dithian-2-yl, optionally substituted aryl, optionally substituted aryloxy, optionally substituted 2H-tetrazole, optionally substituted pyridyl, optionally substituted pyridyloxy, optionally substituted

pyrimidinyl, optionally substituted pyrimidinyl, and optionally substituted pyridazinyl.

Claim 3. A compound of claim 2, wherein A is CH, forming said piperidine ring, m is 0, and (a) n is 0 or (bi) 1;

when

(a) m and n are 0,

a carbonyl group with methyl carbon (a) is formed; where B is O

or

(bi) m is 0, and n is 1,

B and R¹ are taken together with -G-CH(R¹⁴)-(CH₂)_v-J- and with methyl carbon (a) a heterocyclic ring is formed, where R¹⁴ is hydrogen;

where

R², R³, R⁴, R⁵, and R⁶ are independently selected from hydrogen, halogen, haloalkyl, and haloalkoxy;

and

R²², R²³, R²⁴, R²⁵, and R²⁶ are independently selected from hydrogen, dialkoxyalkyl, dithioalkoxyalkyl, alkoxyiminoalkyl, alkylaminocarbonyloxy, optionally substituted 1,3-dioxolan-2-yl, optionally substituted 1,3-dioxan-2-yl, optionally substituted aryloxy, optionally substituted 2H-tetrazole, optionally substituted pyridyloxy, optionally substituted pyrimidinyl, optionally substituted pyrimidinyl, and optionally substituted pyridazinyl.

Claim 4. A compound of claim 3, wherein R², R³, R⁵, R⁶, R²², R²³, R²⁵, and R²⁶ are hydrogen; R⁴ is difluoromethyl, trifluoromethyl or trifluoromethoxy; and R²⁴ is pyrid-2-yloxy or pyrimidin-2-yloxy.

Claim 5. A compound of claim 4, wherein (a) m and n are 0, and a carbonyl group with methyl carbon (a) is formed, where B is O.

Claim 6. A compound of claim 2, wherein A is CH, forming said piperidine ring;

where

(c) **m is 1, and n is 0,**

a double bond between methyl carbon (**a**) and B is formed, where B is a bridging group from methyl carbon (**a**) to R;

where

B is selected from CH, NNR^{15*} , $\text{NNR}^{15}\text{C}(=\text{O})^*$, $\text{NNR}^{15}\text{SO}_2^*$, $\text{NNR}^{15}\text{C}(=\text{O})\text{NR}^{16*}$ and $\text{NNR}^{15}\text{C}(=\text{S})\text{R}^{16*}$, where R^{15} and R^{16} are hydrogen;

and

R is phenyl substituted with R^{17} , R^{18} , R^{19} , R^{20} , and R^{21} where R^{17} , R^{18} , R^{19} , R^{20} , and R^{21} are independently selected from hydrogen, halogen, alkyl, haloalkyl, alkoxy, haloalkoxy, nitro, aryl, aryloxy, and 2-alkyl-2H-tetrazole.

Claim 7. A compound of claim 6, wherein R^2 , R^3 , R^4 , R^5 , and R^6 are independently selected from hydrogen, halogen, haloalkyl, and haloalkoxy; and R^{22} , R^{23} , R^{24} , R^{25} , and R^{26} are independently selected from hydrogen, dialkoxyalkyl, dithioalkoxyalkyl, alkoxyiminoalkyl, alkylaminocarbonyloxy, optionally substituted 1,3-dioxolan-2-yl, optionally substituted 1,3-dioxan-2-yl, optionally substituted aryloxy, optionally substituted 2H-tetrazole, optionally substituted pyridyloxy, optionally substituted pyrimidinyl, optionally substituted pyrimidinyl, and optionally substituted pyridazinyl.

Claim 8. A compound of claim of claim 7, wherein B is the bridging group $\text{NNR}^{15}\text{C}(=\text{O})^*$, $\text{NNR}^{15}\text{SO}_2^*$, and $\text{NNR}^{15}\text{C}(=\text{O})\text{NR}^{16*}$; and R^{17} , R^{18} , R^{19} , R^{20} , and R^{21} are independently selected from hydrogen, halogen, haloalkyl, and haloalkoxy.

Claim 9. A compound of claim 8, wherein R^2 , R^3 , R^5 , R^6 , R^{17} , R^{18} , R^{20} , R^{21} , R^{22} , R^{23} , R^{25} , and R^{26} are hydrogen; R^4 and R^{19} are difluoromethyl, trifluoromethyl or trifluoromethoxy; and R^{24} is pyrid-2-yloxy or pyrimidin-2-yloxy.

Claim 10. A compound of claim 2, wherein A is N, forming said piperazine ring, **bii) m is 0 or d) 1, and n is 1;**

when

bii) m is 0 and n is 1;

single bonds between methyl carbon (a) and the 4-position of said piperazine ring and its other substituents are formed;

where

B is phenyl substituted with R^9 , R^{10} , R^{11} , R^{12} , and R^{13} , where R^9 , R^{10} , R^{11} , R^{12} , and R^{13} are independently selected from hydrogen, halogen, alkyl, haloalkyl, hydroxyl, alkoxy, haloalkoxy, mercapto, and alkylthio;

and

R^1 is hydrogen;

or

d) m and n are 1;

B is said bridging group selected from CH_2 , $*CH_2O$, $*CH_2OC(=O)NR^{15}$, $*CH_2NR^{15}$, and $*C(=O)NR^{15}$, where R^{15} and R^{16} are hydrogen;

and

R is phenyl substituted with R^{17} , R^{18} , R^{19} , R^{20} , and R^{21} where R^{17} , R^{18} , R^{19} , R^{20} , and R^{21} are independently selected from hydrogen, halogen, alkyl, haloalkyl, alkoxy, haloalkoxy, nitro, aryl, aryloxy, and 2-alkyl-2H-tetrazole.

Claim 11. A compound of claim 10, wherein R^2 , R^3 , R^4 , R^5 , and R^6 are independently selected from hydrogen, halogen, haloalkyl, and haloalkoxy; and R^{22} , R^{23} , R^{24} , R^{25} , and R^{26} are independently selected from hydrogen, dialkoxyalkyl, dithioalkoxyalkyl, alkoxyiminoalkyl, alkylaminocarbonyloxy, optionally substituted 1,3-dioxolan-2-yl, optionally substituted 1,3-dioxan-2-yl, optionally substituted aryloxy, optionally substituted 2H-tetrazole, optionally substituted pyridyloxy, optionally substituted pyrimidinyl, optionally substituted pyrimidinyl, and optionally substituted pyridazinyl.

Claim 12. A compound of claim 11, wherein **bii) m is 0 and n is 1;** and R^9 , R^{10} , R^{11} , R^{12} , and R^{13} are independently selected from hydrogen, halogen, haloalkyl, and haloalkoxy.

Claim 13. A compound of claim 12, wherein R^2 , R^3 , R^5 , R^6 , R^9 , R^{10} , R^{12} , R^{13} , R^{22} , R^{23} , R^{25} , and R^{26} are hydrogen; R^4 and R^{11} are difluoromethyl, trifluoromethyl or trifluoromethoxy; and R^{24} is pyrid-2-yloxy or pyrimidin-2-yloxy.

Claim 14. A compound of claim 11, wherein d) m and n are 1; B is the bridging group CH_2 , or $*CH_2O$; and R^{17} , R^{18} , R^{19} , R^{20} , and R^{21} are independently selected from hydrogen, halogen, haloalkyl, and haloalkoxy.

Claim 15. A compound of claim 14, wherein R^2 , R^3 , R^5 , R^6 , R^{17} , R^{18} , R^{20} , R^{21} , R^{22} , R^{23} , R^{25} , and R^{26} are hydrogen; R^4 and R^{19} are difluoromethyl, trifluoromethyl or trifluoromethoxy; and R^{24} is pyrid-2-yloxy or pyrimidin-2-yloxy.

Claim 16. A composition containing an insecticidally effective amount of a compound of claim 1 in admixture with at least one agriculturally acceptable extender or adjuvant.

Claim 17. A composition containing an insecticidally effective amount of a compound of claim 2 in admixture with at least one agriculturally acceptable extender or adjuvant.

Claim 18. A composition containing an insecticidally effective amount of a compound of claim 3 in admixture with at least one agriculturally acceptable extender or adjuvant.

Claim 19. A composition containing an insecticidally effective amount of a compound of claim 4 in admixture with at least one agriculturally acceptable extender or adjuvant.

Claim 20. A composition containing an insecticidally effective amount of a compound of claim 5 in admixture with at least one agriculturally acceptable extender or adjuvant.

Claim 21. A composition containing an insecticidally effective amount of a compound of claim 6 in admixture with at least one agriculturally acceptable extender or adjuvant.

Claim 22. A composition containing an insecticidally effective amount of a compound of claim 7 in admixture with at least one agriculturally acceptable extender or adjuvant.

Claim 23. A composition containing an insecticidally effective amount of a compound of claim 8 in admixture with at least one agriculturally acceptable extender or adjuvant.

Claim 24. A composition containing an insecticidally effective amount of a compound of claim 9 in admixture with at least one agriculturally acceptable extender or adjuvant.

Claim 25. A composition containing an insecticidally effective amount of a compound of claim 10 in admixture with at least one agriculturally acceptable extender or adjuvant.

Claim 26. A composition containing an insecticidally effective amount of a compound of claim 11 in admixture with at least one agriculturally acceptable extender or adjuvant.

Claim 27. A composition containing an insecticidally effective amount of a compound of claim 12 in admixture with at least one agriculturally acceptable extender or adjuvant.

Claim 28. A composition containing an insecticidally effective amount of a compound of claim 13 in admixture with at least one agriculturally acceptable extender or adjuvant.

Claim 29. A composition containing an insecticidally effective amount of a compound of claim 14 in admixture with at least one agriculturally acceptable extender or adjuvant.

Claim 30. A composition containing an insecticidally effective amount of a compound of claim 15 in admixture with at least one agriculturally acceptable extender or adjuvant.

Claim 31. The insecticidal composition of claim 16, further comprising one or more second compounds.

Claim 32. The insecticidal composition of claim 17, further comprising one or more second compounds.

Claim 33. The insecticidal composition of claim 18, further comprising one or more second compounds.

Claim 34. The insecticidal composition of claim 19, further comprising one or more second compounds.

Claim 35. The insecticidal composition of claim 20, further comprising one or more second compounds.

Claim 36. The insecticidal composition of claim 21, further comprising one or more second compounds.

Claim 37. The insecticidal composition of claim 22, further comprising one or more second compounds.

Claim 38. The insecticidal composition of claim 23, further comprising one or more second compounds.

Claim 39. The insecticidal composition of claim 24, further comprising one or more second compounds.

Claim 40. The insecticidal composition of claim 25, further comprising one or more second compounds.

Claim 41. The insecticidal composition of claim 26, further comprising one or more second compounds.

Claim 42. The insecticidal composition of claim 27, further comprising one or more second compounds.

Claim 43. The insecticidal composition of claim 28, further comprising one or more second compounds.

Claim 44. The insecticidal composition of claim 29, further comprising one or more second compounds.

Claim 45. The insecticidal composition of claim 30, further comprising one or more second compounds.

Claim 46. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 16 to a locus where insects are present or are expected to be present.

Claim 47. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 17 to a locus where insects are present or are expected to be present.

Claim 48. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 18 to a locus where insects are present or are expected to be present.

Claim 49. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 19 to a locus where insects are present or are expected to be present.

Claim 50. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 20 to a locus where insects are present or are expected to be present.

Claim 51. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 21 to a locus where insects are present or are expected to be present.

Claim 52. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 22 to a locus where insects are present or are expected to be present.

Claim 53. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 23 to a locus where insects are present or are expected to be present.

Claim 54. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 24 to a locus where insects are present or are expected to be present.

Claim 55. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 25 to a locus where insects are present or are expected to be present.

Claim 56. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 26 to a locus where insects are present or are expected to be present.

Claim 57. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 27 to a locus where insects are present or are expected to be present.

Claim 58. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 28 to a locus where insects are present or are expected to be present.

Claim 59. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 29 to a locus where insects are present or are expected to be present.

Claim 60. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 30 to a locus where insects are present or are expected to be present.

Claim 61. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 31 to a locus where insects are present or are expected to be present.

Claim 62. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 32 to a locus where insects are present or are expected to be present.

Claim 63. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 33 to a locus where insects are present or are expected to be present.

Claim 64. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 34 to a locus where insects are present or are expected to be present.

Claim 65. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 35 to a locus where insects are present or are expected to be present.

Claim 66. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 36 to a locus where insects are present or are expected to be present.

Claim 67. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 37 to a locus where insects are present or are expected to be present.

Claim 68. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 38 to a locus where insects are present or are expected to be present.

Claim 69. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 39 to a locus where insects are present or are expected to be present.

Claim 70. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 40 to a locus where insects are present or are expected to be present.

Claim 71. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 41 to a locus where insects are present or are expected to be present.

Claim 72. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 42 to a locus where insects are present or are expected to be present.

Claim 73. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 43 to a locus where insects are present or are expected to be present.

Claim 74. A method of controlling insects, comprising applying an insecticidally effective amount of a composition of claim 44 to a locus where insects are present or are expected to be present.